

REMARKS**Summary of the Office Action**

A new title is required because the title is allegedly “not descriptive.”

Claims 3-5 stand objected to under 37 C.F.R. § 1.75(c) as allegedly being of improper dependent form for failing to further limit the subject matter of a previous claim.

Claim 5 stands rejected under 35 U.S.C. § 112, second paragraph for allegedly being indefinite.

Claims 1-5 stand rejected under the judicially created doctrine of non statutory obviousness-type double patenting as being unpatentable over claims 1 and 4-7 of U.S. Patent No. 7,326,907 in view of Nguyen (U.S. Patent No. 5,477,933) (hereinafter “Nguyen”).

Claims 1-5 stand rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by Mattson et al. (U.S. Patent No. 7,379,528) (hereinafter “Mattson”).

Summary of the Response to the Office Action

Applicants have amended independent claim 1, and added new dependent claims 10 and 11, to differently describe embodiments of the disclosure of the instant application and/or to improve the form of the claims. Applicants have added dependent claims 10 and 11. Accordingly, claims 1-11 are currently pending with claims 6-9 currently withdrawn from consideration. Applicants have also amended the title in response to the Examiner’s requirement at page 2, section 4 of the Office Action.

Requirement for a New Title

A new title is required because the title is allegedly “not descriptive.” In response, Applicants have replaced the previous title with a new amended title incorporating the Examiner’s helpful suggested new title as provided at page 2, section 4 of the Office Action. Accordingly, withdrawal of the requirement for a new title is respectfully requested.

Objections to Claims 3-5

Claims 3-5 stand objected to under 37 C.F.R. § 1.75(c) as allegedly being of improper dependent form for failing to further limit the subject matter of the previous claim. These objections are respectfully traversed for at least the following reasons.

At page 3 of the Office Action, with regard to dependent claim 3, the Examiner alleges that “[w]hen the conductor disposed in the through holes, it is obvious that the conductor disposed on the inner wall of the holes.” With regard to dependent claim 4, the Examiner appears to be alleging that how the holes are filled fails to further limit the existence of the conductive material in the holes of claim 1. The Examiner’s allegations regarding dependent claims 3 and 4 in these regards are respectively traversed for at least the following reasons.

Applicants respectfully submit that dependent claim 3 of the instant application corresponds to the configuration illustrated, for example, in Figs. 6A and 6B of the instant application. Even further, this arrangement is described, for example, in paragraph [0062] of the specification. Applicants respectfully submit that dependent claim 4 of the instant application corresponds to the configuration illustrated, for example, in Figs. 7A and 7B of the instant application. Even further, this arrangement is described, for example, in paragraph [0065] of the specification. Accordingly, dependent claims 3 and 4 clearly describe respective embodiments

of the disclosure of the instant application that further limit the broader recitations of independent claim 1 in different ways in a manner that is fully consistent with the directives of 37 C.F.R. § 1.75(c). Accordingly, withdrawal of the objections to dependent claims 3-4 is respectfully requested.

With regard to the objection to dependent claim 5, the Examiner alleges that “the hollow member has already filled with conductor” in the description of independent claim 1. It appears that this is a factual misunderstanding in the Office Action, however. For example, this feature of the conductive member being disposed by “filling the interior of the through hole” is first recited in the above-discussed dependent claim 4. Accordingly, it appears that the Examiner might have understood dependent claim 5 as being dependent from dependent claim 4. However, dependent claim 5 is instead dependent from independent claim 1. As a result, withdrawal of the objection to dependent claim 5 is also respectfully requested.

Rejection under 35 U.S.C. § 112, Second Paragraph

Claim 5 stands rejected under 35 U.S.C. § 112, second paragraph for allegedly being indefinite. This rejection is respectfully traversed as discussed above with regard to Applicants’ traversal of the objection of claim 5. Applicants respectfully submit that all of the currently pending claims fully comply with the requirements of 35 U.S.C. § 112, second paragraph. Accordingly, Applicants respectfully request that the rejection under 35 U.S.C. § 112, second paragraph be withdrawn.

Double Patenting Rejection

Claims 1-5 stand rejected under the judicially created doctrine of non statutory obviousness-type double patenting as being unpatentable over claims 1 and 4-7 of U.S. Patent No. 7,326,907 in view of Nguyen. Applicants submit a Terminal Disclaimer concurrently herewith to facilitate allowance of the present application, thereby obviating the double patenting rejection. Accordingly, Applicants respectfully request that the double patenting rejection be withdrawn.

Rejection under 35 U.S.C. § 102(e)

Claims 1-5 stand rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by Mattson. Applicants have amended independent claim 1 to differently describe embodiments of the disclosure of the instant application and/or to improve the form of the claims. To the extent that these rejections might be deemed to still apply to the claims as newly-amended, the rejections are respectfully traversed for at least the following reasons.

Applicants have newly-amended independent claim 1 of the instant application to describe a combination of features of a wiring substrate arrangement that includes the following features (reference numerals are shown as examples from the disclosure of the instant application):

- 1) in each wiring substrate (20, 25), a plurality of through holes (20c, 25c) and conductive members (21, 26) are provided;

- 2) the positions of the through holes (20c) in the first wiring substrate (20) differ from the positions of the through holes (25c) in the second wiring substrate (25); and

3) the through holes (25c) and the conductive members (26) in the second wiring substrate (25) are formed at a pitch (S_2) which is smaller than a pitch (S_1) of the through holes (20c) and the conductive members (21) in the first wiring substrate (20).

For the above features (1) to (3), Applicants refer to the configuration(s) of the wiring substrate shown in Figs. 1, 2, 3A, 3B, 4A, and 4B of the instant application. In addition, for the feature (3), Applicants note that there is a description in paragraph [0037] of the specification of the instant application that “unlike bump electrodes 17 of PD array 15 and through holes 20c and conductive members 21 of first wiring substrate 20, through holes 25c and conductive members 26 are formed at a pitch S_2 , which is smaller than the pitch S_1 .”

Applicants respectfully submit that, in the wiring substrate of the invention disclosed in the instant application, by using the above configuration, as described in paragraph [0037], the “wiring substrate of wiring substrate section 2, which comprises first wiring substrate 20 and second wiring substrate 25, is thus provided with an arrangement wherein, in the view in the conduction direction from the signal input surface to the signal output surface and perpendicular to these surfaces, the positions of the through holes 20c in first wiring substrate 20 differ from the positions of the through holes 25c in second wiring substrate 25.”

Applicants respectfully submit that the configuration of the wiring substrate of the present invention including at least the above-described features is neither disclosed, nor even suggested, in the cited Mattson reference.

More particularly, Applicants respectfully submit that in the radiation detector module 260 shown in Fig. 16 of Mattson, two radiation shield portions 286, 286' with feedthroughs 288,

288' are provided, and the radiation detector module 260 arranges the feedthroughs 288, 288' with a lateral offset in the radiation shield portions 286, 286'.

However, Applicants note that in the configuration of the radiation detector module 260 disclosed in Mattson, the feedthroughs 288' in the lower radiation shield portion 286' are formed at a same pitch as the feedthroughs 288 in the upper radiation shield portion 286, with the lateral offset of the positions. Please see Fig. 16 and col. 8, line 43-col. 9, line 22 of Mattson.

On the other hand, Applicants respectfully submit that in the wiring substrate of the present invention, the through holes (25c) and the conductive members (26) in the second wiring substrate (25) are formed at a pitch (S₂) which is smaller than the pitch (S₁) of the through holes (20c) and the conductive members (21) in the first wiring substrate (20), as described previously in the foregoing discussion. Thus, Applicants respectfully submit that the configuration of the wiring substrate described above, and in the combination of features of newly-amended independent claim 1 of the instant application, is completely different from the configuration disclosed in Mattson.

Accordingly, Applicants respectfully assert that the rejections under 35 U.S.C. § 102(e) should be withdrawn because Mattson does not teach or suggest each feature of newly-amended independent claim 1 of the instant application. As pointed out in MPEP § 2131, "[t]o anticipate a claim, the reference must teach every element of the claim." Thus, "[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. Verdegaal Bros. v. Union Oil Co. Of California, 2 USPQ 2d 1051, 1053 (Fed. Cir. 1987)."

Furthermore, Applicants respectfully assert that the dependent claims 2-5, and newly added dependent claims 10 and 11, are allowable at least because of their dependence from independent claim 1, and the reasons discussed previously.

Applicants respectfully submit that in the configuration described in newly-added dependent claim 10, the conductive members (21) of the first wiring substrate are electrically connected to the corresponding conductive members (26) of the second wiring substrate via bump electrodes (27); the bump electrodes (27) are electrically connected directly to output portions (21b) of the corresponding conductive members of the first wiring substrate; and the bump electrodes (27) are electrically connected via wiring (28) to input portions (26a) of the corresponding conductive members of the second wiring substrate. See, for example, Figs. 1, 3B, 4A, and paragraph [0039] of the specification, of the instant application.

Applicants respectfully submit that in the configuration described in newly-added dependent claim 11, in addition to input portions (21a) of the conductive members, electrode pads (22) electrically connected via wirings (23) to the input portions (21a) of the corresponding conductive members are formed on the input surface of the first wiring substrate. See, for example, Fig. 3A, and paragraph [0034] of the specification, of the instant application.

Applicants respectfully submit that neither of these configurations, as described respectively in newly added dependent claims 10 and 11 of the instant application, are disclosed in Mattson.

CONCLUSION

In view of the foregoing, Applicants submit that the pending claims are in condition for allowance, and respectfully request reconsideration and timely allowance of the pending claims. Should the Examiner feel that there are any issues outstanding after consideration of this

response, the Examiner is invited to contact Applicants' undersigned representative to expedite prosecution. A favorable action is awaited.

EXCEPT for issue fees payable under 37 C.F.R. § 1.18, the Commissioner is hereby authorized by this paper to charge any additional fees during the entire pendency of this application including fees due under 37 C.F.R. § 1.16 and 1.17 which may be required, including any required extension of time fees, or credit any overpayment to Deposit Account No. 50-0573. This paragraph is intended to be a **CONSTRUCTIVE PETITION FOR EXTENSION OF TIME** in accordance with 37 C.F.R. § 1.136(a)(3).

Respectfully submitted,

DRINKER BIDDLE & REATH LLP



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By:

Paul A. Fournier
Reg. No. 41,023

Customer No. 055694

DRINKER BIDDLE & REATH LLP

1500 K Street, N.W., Suite 1100

Washington, DC 20005-1209

Tel.: (202) 842-8800

Fax: (202) 842-8465